

SIX NEW SPECIES OF PARMELIA (LICHENES) FROM AFRICA

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1. Parmelia chowoensis Hale, sp. nov.

Fig. 1

Thallus adnatus, corticola, coriaceus, albocinereus, 4-6 cm latus, lobis subirregularibus, 2-2.5 mm latis, contiguus vel subimbricatis, margine bulbato-ciliatis, parce inflatis basi, superne planus, nitidus, emaculatus, sorediis isidiisque destitutis, cortex superior 14-18 μ crassus, stratum gonidiale 15-10 μ crassum, medulla alba, 70-90 μ crassa, cortex inferior 12 μ crassus, subtus castaneus, modice rhizinosus, rhizinis castaneis, simplicibus. Apothecia numerosa, subpedicellata, 2-4 mm diametro, amphithecio crenato, disco imperforato, sporis octonis, 3-4 x 6-7 μ .

Holotype: Zambia: Chowo Forest, Nyika Plateau, collected by Memeika Jellicoe, no. 53, April 1969 (BM; isotype in US).

Chemistry: Cortex K+ yellow (Atranorin), medulla K-, P+ red, C- (protocetraric acid).

This small species in section Bicornuta is characterized by the pale lower surface and the presence of protocetraric acid. Only one other species, P. subinflata Hale from the Philippines, produces this acid, and it too has weakly inflated bulbate cilia. Another African species, P. hypocraea Vainio, is superficially close but has distinct bulbae and salazinic acid.

2. Parmelia composita Hale, sp. nov.

Fig. 2

Thallus expansus, corticola, coriaceus, laxe adnatus vel suberectus, viridi-cinereus, 8-15 cm latus, lobis rotundatis, 5-15 mm latis, margine ciliatis, ciliis 1-3 mm longis, superne planus, nitidus, valde albomaculatus, aetate rimosus, cortex superior 18-20 μ crassus, stratum gonidiale 20 μ crassum, medulla alba, 130-150 μ crassa, cortex inferior 15 μ crassus, subtus niger vel marginem versus castaneus vel albo-variegatus, centro rhizinosus, rhizinis sparsis, simplicibus vel furcatis, longis, margine nudus. Apothecia pedicellata, 3-15 mm diametro, disco perforato, sporis octonis, 10-12 x 22-24 μ , episporio 2 μ crasso.

Holotype: Tanzania: 2 km N of Kitoto Camp, Mt. Meru, E. slope, Arusha Prov., elev. 2500 m, collected by R. Santesson, no. 22985a, 7 Jan. 1971 (UPS; isotype in US).

Chemistry: Cortex K+ yellow (atranorin), medulla K+ red, P+ orange, C+ rose, (gyrophoric and norstictic acids).

Additional specimens examined: Same locality: Santesson 21594a, 22850, 23069c (UPS); 21594a, 22886b (UPS, US).

This Amphigymnia species appears at first to be related to Parmelia perforata (Jacq.) Ach.), and American species which also has norstictic acid. P. composita, however, produces in addition gyrophoric acid, the first instance of the joint occurrence of these two acids, as far as I am aware, and has a darker mottled margin below rather than the distinct pure white rim of P. perforata. It also has larger spores and the less dense but strong maculation more typical of P. pseudonilgherrensis Asah.

3. Parmelia enormis Hale, sp. nov.

Fig. 3

Thallus expansus, enormis, 10-30 cm latus, coriaceus, saxicola, cinereo-albidus, lobis sublinearibus, centro imbricatis, 5-8 mm latis, margine integris vel axille ciliatis, superne planus, nitidus, emaculatus, sorediis isidiisque destitutis, cortex superior 20-22 μ crassus, stratum gonidiale 30-40 μ crassum, continuum, medulla alba, 130-150 μ crassa, cortex inferior 16-20 μ crassus, subtus pallide castaneus, dense rhizinosus, rhizinis pallidis, elongatis, simplicibus. Apothecia numerosa, subpedicellata, 3-8 mm diametro, disco imperforato, sporis octonis, 6-7 x 8-11 μ .

Holotype: Zambia: On granite rocks, Zambia Rest House, Nyika Plateau, elev. 7600 ft., collected by Memeika Jellicoe, s.n., September 1968 (BM; isotypes in TNS, US).

Chemistry: Cortex K+ yellow (atranorin), medulla K+ red, P+ orange, C- (salazinic acid).

The presence of cilia in the axils of this most remarkable lichen places it in section Imbricaria, although superficially, because of the linear lobes, it seems to be a Hypotrachyna species. P. usambarensis Stein. & Zahlbr., another very large linear-lobed, saxicolous species in Africa, differs in having isidia and

a black lower surface.

4. Parmelia pachydactyla Hale, nom. et stat. nov. Fig. 4

Parmelia caperata var. isidiophora Steiner, Stiz. K. Akad. Wiss. Wien Math.-Naturw. Cl. 106:215. 1897.

Parmelia steineri Dodge, Ann. Mo. Bot. Garden 46:125. 1959.
Based on P. caperata var. isidiophora Steiner [not P. steineri Gyelnik, Ann. Mycol. 36:289. 1938 (= P. molliscula Acharius)].

Holotype: Kenya: Athi Plains, Liechtenstein s.n. (WU).

Chemistry: Cortex K- (usnic acid), medulla K-, P+ red, C-, (protocetraric acid).

Additional specimen examined: S. Rhodesia: Zimbabwe, Div. Victoria, L Kofler, 27.6.1963 (LD,US).

The type of this saxicolous lichen is rather fragmentary but the discovery of a better specimen by Kofler in Rhodesia has provided good material for a fuller understanding of the species. The lobes are quite adnate and rather narrow (1-2 mm) and the "isidia" scattered and very thick (about .3 mm wide and .5 mm high). It would appear to be related to the pantemperate P. caperata (L.) Ach., a larger species with soredia. P. rudis Harm. from Indochina has the same chemistry but the isidia are much finer.

5. Parmelia subschimperi Hale, sp. nov. Fig. 5

Thallus laxe adnatus, corticola, 6-12 cm latus, viridi-cinereus, lobis rotundatis, 10-18 mm latis, margine ciliatis, ciliis 1-2.5 mm longis, sorediatis, soraliis linearibus vel pro parte irregularibus et submarginalibus, superne planus, nitidus, crasse albo-maculatus, cortex superior 15-18 μ crassus, stratum gonidiale 20-25 μ crassus, medulla alba, 100-120 μ crassa, cortex inferior 12-14 μ crassus, subtus niger, sparse rhizinosus, rhizinis simplicibus, ambitu nudus, castaneus. Apothecia ignota.

Holotype: Kenya: Bamboo zone, National Park Road, W. slope, Mt. Kenya, elev. 2700-3100 m, Nanyuki Distr., Central Prov. collected by R. Santesson, no. 22150 (UPS; isotype in US).

Chemistry: Cortex K+ yellow (atranorin), medulla K-, P-, C-, KC+ rose (norlobaridone).

Additional specimens examined: Kenya: Mt. Meru, Arusha, Prov., Santesson 21583a (UPS), 22911b, 22912a, 22943 (UPS, US); same locality as holotype, Santesson 22042b, 22173 (USP, US).

As the name implies, *P. subschimperii* (subg. *Amphigymnia*) is related to *P. schimperii* Mull. Arg., which may in fact be considered its nonsorediate counterpart. *P. schimperii* has similar strong white maculae and a dark lower surface, even toward the marginal zone. Norlobaridone is now known to be rather common in *Amphigymnia* (Kurokawa, Jour. Hattori Bot. Lab. 32:205-218. 1969). One other norlobaridone-containing species in Africa, *P. hababiana* Gyelnik, could be confused with *P. subschimperii*, but it has smaller more membranous lobes, uniformly short cilia, smaller maculae, and a more or less distinct white or mottled zone below at the margin. *P. pseudonilgherrensis* Asah. is very close in overall morphology but contains alectoronic acid.

6. *Parmelia xanthoparmelioides* Hale, sp. nov.

Fig. 6

Thallus laxe adnatus, saxicola, viridi-flavicans, 4-8 cm latus, lobis linearibus, dichotome ramosis, 1.5-2.5 mm latis, eciliatis, superne planus, nitidus, emaculatus, apicem versus granulato-sorediatus, sorediis crassis, pro parte subfatiscentibus, cortex superior 12-14 μ crassus, stratum gonidiale 20-25 μ crassum, medulla alba, 100-130 μ crassa, cortex inferior 12-14 μ crassus, subtus niger, modice vel sparse rhizinosus, rhizinis tenuibus, dichotome divisis. Apothecia ignota.

Holotype: South Africa: Cliffs on hills NW of Woodhead Reservoir, Table Mtn., Cape Prov., collected by N. S. Pillans 3857, February 1920 (BM; isotypes in LD, US).

Chemistry: Cortex K- (Usnic acid), medulla K+ red, P+ orange, C-(salazinic acid).

Were it not for the presence of dichotomously branched rhizines, this species would appear to be in the *P. stenophylla* group of subgenus *Xanthoparmelia*. As is the case with *P. sinuosa* (Sm). Ach., another yellow species formerly placed in *Xanthoparmelia*, the correct sectional disposition is better made according to rhizine characters. A very similar rare species from

tropical America, P. meyeri Zahlbr., also has usnic and salazinic acids but is smaller, closely adnate, and has more pustulate soralia.



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Fig. 1. Isotype of Parmelia chowoensis (US). Fig. 2. Isotype of P. composita (US). Scale in mm.



Fig. 3. Isotype of Parmelia enormis (US). Fig. 4. Parmelia pachydactyla (Kofler, US). Scale in mm.

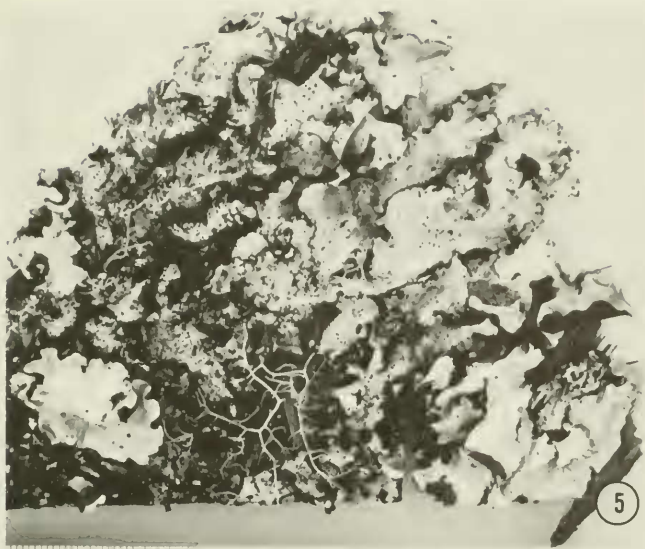


Fig. 5. Isotype of Parmelia subschimperii (US). Fig. 6. Isotype of P. xanthoparmelioides (US). Scale in mm.